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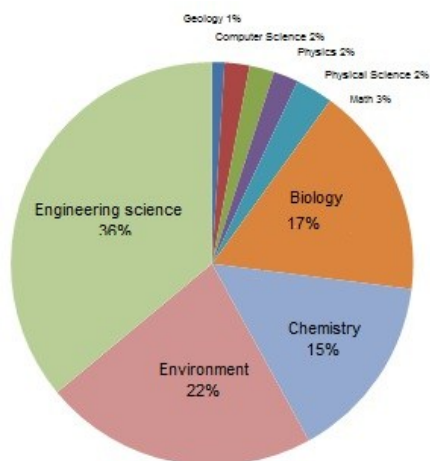
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DECEMBER 2014 — JANUARY 2015

Muscat Symposium Links U.S. and MENA Region Scientists

Arab and U.S. scientists and researchers from across the Middle East and North Africa (MENA) discussed the state of applied scientific research at the Second Arab-American Frontiers of Science, Engineering, and Medicine Symposium held in Muscat, Oman from December 13 to 15, 2014. The U.S. National Academies of Science, Engineering and Medicine (NAS), the United States Agency for International Development, The Research Council, Sultan Qaboos University and the Richard Lounsbery Foundation partnered in organizing the symposium. It convened scientists, engineers, and medical professionals from the United States and Arab League countries for a series of discussions and presentations on the latest advancements and

funding opportunities in their fields. Presenters assessed that while the MENA region boasts 286 universities, the quality of applied scientific research projects had declined in the Arab World over the last decade. The decline was attributed to a lack of clear research priorities that link to market needs, brain-drain, and a limited focus on science at a policy level. A goal of the symposium was to provide a networking platform to enhance dialogue and create joint research opportunities among young scientists in MENA countries and the United States. For more information on research funding opportunities and Arab-American collaborations please visit the NAS website: <http://www.nationalacademies.org/>



A breakdown of top fields for research in the MENA region.



Prof. Muna Abu Dalo during the participants' research paper presentations. Photo courtesy of ESTH Hub

U.S. Supports Clean Up Efforts Following Massive Oil Spill in Southern Israel

On December 3, a suspected construction accident ruptured an oil pipeline spilling over one million gallons of oil into southern Israel. Media reports claimed this to be among the worst environmental disasters in Israel's history due to the size of the spill and its incident impact on the nearby Evrona Nature Reserve. While 90 percent of the oil had been removed by December 12, hundreds of small oil puddles (<2 meters in diameter) and 35 acres of contaminated soil stretched across the Reserve. U.S. Embassy Tel Aviv's offers of assistance were quickly taken up by the Government of Israel (GOI) as it looked to the USG to help identify experts and best practices in soil remediation. Embassy Tel Aviv linked technical experts from Israel's Ministry of Environmental Protection to experts at the U.S. Environmental Protection Agency (EPA). EPA officials were able to offer several recommendations. The Embassy and EPA visited the site in mid-January for further consultations. The overall cleanup and subsequent treatment of the contaminated soil is expected to take months. The Embassy also approached the U.S. Forest Service (USFS) to explore USFS technical support to Israel to help rehabilitate the nature reserve. The USFS visited Israel in mid-January and is discussing with the Israeli Nature and Parks Authority how best to provide such expertise.



Oil running through Evrona Nature Reserve. Photo: MoEP Spokesperson's Unit

Three Conferences Underscore Regional Water Issues

The water-energy-food nexus, and the need for better water management were underscored at three regional and international water conferences held across the MENA region in December and January.

Egypt: Third Arab Water Forum, December 9-11, 2014

Water-related food security challenges took center stage at the Third Arab Water Forum organized by the Arab League's Arab Water Council (AWC) in Cairo from December 9-11, 2014. Dr. Mohammad Abu Zaid, AWC Secretary General and a former Egyptian Minister of Water, led several panel discussions covering themes related to agriculture and ensuring food security in a water-scarce region. The panels yielded recommendations for Arab League members, including: improving the water-productivity rain fed and irrigated agriculture systems; adopting improved technologies and agricultural extension practices; and forming a regional entity to create an "Arab food basket" that could help monitor and negotiate better food prices. Countries also need better water accounting systems to assess and control water consumption. While the MENA region has the lowest renewable water resources per capita, the region's population has risen dramatically from 119 million in 1950 to 400 million in 2000, and could reach 600 million in the next 10 to 15 years, putting additional pressure on already scarce resources.



Presenting the Road Map at the Arab Water Forum. Photo courtesy of ESTH Hub.

Jordan: Third Arab Water Week at the Dead Sea, January 11-15, 2015

As snow and ice blanketed Amman, Arab water experts, government officials, and donor organizations convened at the Dead Sea to discuss regional water and wastewater management issues. The Arab Countries Water Utilities Association (ACWUA) organized the conference in partnership with the Arab Ministerial Water Council and the Jordanian Ministry of Water and Irrigation. Presenting on outcomes from the December Cairo conference, Arab League representatives again focused on agriculture and the need to raise water efficiency and productivity across that sector. Session participants noted that better cooperation was required between water and agriculture ministries to ensure that recommendations agreed at a regional level would be implemented domestically in MENA countries. The high financial, energy, and emissions costs of desalinated water featured in a presentation by Arabian Gulf University Professor Waleed Al-Zubari, who discussed findings from his report on Bahrain's municipal water system (<http://www.chathamhouse.org/publication/costs-municipal-water-supply-bahrain>). Other panels and presentations targeted the need to raise energy efficiency in water utilities and improve water utility performance. More on the conference can be found at: <http://www.acwua.org>.

Abu Dhabi: International Water Summit, January 19-22, 2015

Water management, productivity, and costs also featured in discussions at the January 19-22 International Water Summit that was part of the 2015 Abu Dhabi Sustainability Week. International companies, technical experts, and government officials agreed that water consumption in the Gulf Cooperation Council could not continue at such unsustainably high amounts. By some speakers' accounts, total national water consumption per capita in the Gulf countries was estimated around 4-5 times that of Germany. Gulf countries that previously focused solely on raising water supply would have to shift focus to moderating demand, which is growing exponentially along with the region's population. Experts highlighted the high energy inputs required to produce desalinated water and pump water through distribution networks. To this end, Abu Dhabi is building an advanced deep gravity sewage system to help reduce the power required to move sewage water through the municipal network. Experts noted that the region could use more recycled wastewater for landscaping and certain agriculture uses, but judged that more needs to be done to capture data on water quality and create a regional framework for using treated wastewater and biosolids. Panelists also suggested that countries in the region should develop water budgets, to determine the baseline water needs according to their populations. For more see: <http://iwsabudhabi.com>.

Edraak Brings Arabic MOOCs to the MENA Region

The ESTH Hub met in January with the Queen Rania Foundation for Education and Development to learn more about the Edraak program, which has been bringing Arabic-language massive open online courses (MOOCs) to the MENA region since its launch in June 2014. Edraak (which means to comprehend) aims to increase educational opportunities for learners through free online classes. The program uses a Harvard EDX platform and the courses are taught and facilitated by highly-qualified professors and teaching associates, who help answer online questions from students. The average class size has been 10,000 students, with the highest enrollment rates in Egypt, Algeria, Jordan, Morocco, and Saudi Arabia.



Courses have tackled issues ranging from the socio-political underpinnings of the Arab Spring, mental health among children, to employability skills. Edraak courses on employability skills appeal to both young job-seekers who need resume tips, and employers looking to offer additional soft-skills training to new recruits and interns. Edraak aims to expand available courses into business, entrepreneurship, and science, technology, engineering, and math. For more, visit <https://www.edraak.org>

Regional GLOBE Program Activities

NASA's Global Learning and Observations to Benefit the Environment (GLOBE) program renewed its regional program based in Amman, Jordan with a January 4-8, 2015 "Train the Trainers" workshop. The workshop brought together program coordinators and new GLOBE trainers from Jordan, Morocco, Tunisia, the Palestinian Territories, and Egypt. It focused on training and mobilizing schools to use GLOBE kits that include soil and water sampling materials to gather and analyze scientific data about their communities that is compiled into a worldwide database, and can be accessed from anywhere around the world. The GLOBE program is a worldwide hands-on, school-based science and education program that engages students all over the world under NASA general guidance in monitoring changes to the global environment through the use of GLOBE kits.



Students from Al Mutanabi JHS and ORT Afek JHS took time out of their research together for a photo. Courtesy of Embassy Tel Aviv.

In Israel, a Hebrew-speaking and an Arabic-speaking junior high school (JHS) teamed up to initiate collaboration under NASA's GLOBE program. Thanks to the efforts of two GLOBE teachers and the support of their principals, sixty students from Al Mutanabi JHS in Tamra and ORT Afek JHS in Kiryat Bialik will conduct joint research on the impact of water quality on herbal plants. This is the first collaboration between GLOBE schools in Israel from different ethnic backgrounds and highlights the important role that science can play in overcoming cultural barriers. Embassy Tel Aviv is a longtime supporter of the GLOBE program, which was developed by NASA in the late 1990s to promote earth science and environmental awareness. Israel's GLOBE program coordinator, Dr. Farid Hamdan, has grown the program to include over 150 schools.

Israel Contributed over \$8 Million to the Global Ebola Fight

Israel contributed \$8.75 million to the UN's Multi-donor Trust Fund to fight Ebola in December. Israel's contribution caps previous material assistance efforts including: a training of trainers for Ministry of Health (MoH) professionals in Cameroon and Cote d'Ivoire, equipping an isolation unit in Addis Abba, and the donation of three 20-bed Ebola Treatment Units or "Hospitals of Hope" to Guinea, Sierra Leone, and Liberia at a cost of \$300,000. Embassy Tel Aviv assisted key MoH officials in attending a Doctors without Borders (MSF) Ebola training in Brussels. The MoH returned from the training advocating for the formation of volunteer medical teams to assist in Ebola-affected countries. The MoH subsequently agreed to pay salaries and benefits to public health care workers who join such a volunteer team.



Gil Haskel, Head of Israel's Agency for International Development Cooperation at the launching of Israel's "Hospitals of Hope". The three units were sent to Guinea, Sierra Leone, and Liberia. Photo: Embassy Tel Aviv.

Healthy Living in 2015

Make health your number one priority for this new year.

Visit the CDC Healthy Living site for daily tips: <http://www.cdc.gov/HealthyLiving/>

In December: Recognizing 2014 Women in Science Honoree Dr. Sara Abu Kaf



Dr. Abu Kaf was the first woman in her Arab Bedouin village to attend university. She and her sister were the first women in their village to obtain doctoral degrees. Dr. Abu Kaf recently returned from a Fulbright scholarship for post-doctorate work at Harvard University. Based on her research with Bedouin women, Dr. Abu Kaf developed a mental health services model to better prevent and treat depression among vulnerable populations. She initiated an intervention program to address dropout rates within Bedouin society and is also a Conflict Resolution Program lecturer at Ben Gurion University. Dr. Abu Kaf is currently a clinical psychology researcher, a lecturer, and a mental health practitioner at Ben-Gurion University.

Dr. Abu Kaf. Photo courtesy of Embassy Tel Aviv

The ESTH Hub thanks all of the inspiring Women in Science honorees for 2014, and is pleased to announce the 2015 honorees.

The Women in Science Initiative Celebrates the 2015 Honorees

The Regional Environment, Science, Technology, and Health Hub for the Middle East and North Africa is pleased to announce the 2015 honorees for the Women in Science initiative. U.S. embassies across the region have recognized 10 accomplished scientists who promote science and technology advancement and encourage young women and girls to pursue science and technology education and careers.

This year's honorees are:

Dr. Rana Dajani, Associate Professor Molecular Cell Biology at the Hashemite University (Jordan)

Dr. Lubna Tahtamouni, Associate Professor at the Department of Biology and Biotechnology at the Hashemite University (Jordan)

Dr. Maryam Matar, Founder and Chairperson at UAE Genetic Diseases Association

Dr. Nisrine Machaka-Houri, Plant Researcher (Lebanon)

Dr. Azza AbdelFattah Shehab, Professor of Ophthalmology at Minia University (Egypt)

Dr. Fatma Al Jasmi, Assistant Dean of Clinical Affairs and Assistant Professor of Pediatrics at the UAE University

Dr. Rola I. Jadallah, Assistant Professor in Biology at the Arab-American University of Jenin (Palestinian Territories)

Dr. Majeda Alqattan, Assistant Undersecretary at the Ministry of Health (Kuwait)

Prof. Fatma A. K. Al-Mulhim, Consultant Radiologist at the King Fahd Hospital of the University in Dammam (Saudi Arabia)

Prof. Nadia Fenina, Director General of Ministry of Health's Department of Pharmacy and Medicine, and Professor at the Faculty of Pharmacy in Tunisia

Interested in U.S. Environmental Businesses and Exports?

Check out this Department of Commerce link:

<http://export.gov/industry/environment/>

And visit the U.S. Embassy Web site in your MENA country.

This report is published by Hub Officer Elizabeth Hattingh and Hub Specialist Yara Abu Laban, with contributions from U.S. missions in the region.

For more information about the ESTH Hubs and the State Department's Bureau of Oceans and International Environmental and Scientific Affairs (OES) please look up OES on [Facebook](#) and www.state.gov.



Photo credit: OES Facebook